10/582915

AP3 Rec'd PCT/PTO 14 JUN 2007

<110>	KIM, Kye-Seong	
<120>	Novel miRNA molecules isolated from human er	nbryonic stem cell
<130>	OP04-1083	
<160>	99	
<170>	KopatentIn 1.71	
<210>	1	
<211>		
<212>		
<213>	Homo sapiens	
<400>	1	
acuuuaa	cau ggaagugcuu ucu	23
<210>	2	
<211>	23	
<212>		
	Homo sapiens	
~215*		
<400>	2	
uaagugo	uuc cauguuuuag uag	23
00	0 0 0	
(01.0)		
<210>		
<211>		
<212>	RNA	
<213>	Homo sapiens	
<400>	3	
	ugg ggguaccugc ug	22
uuuuuuu	222 222 222 222 222 222 222 222 222 22	
<210>	4	
<210>		
<211>	23	
	RNA	
<213>	Homo sapiens	
<400>	4	
uaagugo	uuc cauguuucag ugg	23
<210>	5	
<211>		
<212>		
<213>	Homo sapiens	
<400>	5	
uaaacgugga uguacuugcu uu 22		
~210	6	
<210>	6	
<211>	23	

<212> RNA <213> Homo sapiens <400> 6 uaagugcuuc cauguuugag ugu 23 <210> 7 <211> 22 <212> RNA <213> Homo sapiens <400> 7 aauugcacuu uagcaauggu ga 22 <210> 8 <211> 23 <212> RNA <213> Homo sapiens <400> 8 uaauacugcc ggguaaugau gga 23 <210> 9 <211> 22 <212> RNA <213> Homo sapiens <400> 9 acauagagga aauuccacgu uu 22 <210> 10 <211> 22 <212> RNA <213> Homo sapiens <400> 10 aaucauacac gguugaccua uu 22 <210> 11 <211> 21 <212> RNA <213> Homo sapiens <400> 11 aauaauacau gguugaucuu u 21 <210> 12 <211> 21 <212> RNA <213> Homo sapiens <400> 12 gccugcuggg guggaaccug g 21

· ·

۴-

<210> 13 <211> 21 <212> RNA <213> Homo sapiens <400> 13 gugccgccau cuuuugagug u 21 <210> 14 <211> 23 <212> RNA <213> Homo sapiens <400> 14 aaagugcugc gacauuugag cgu 23 <210> 15 <211> 22 <212> RNA <213> Homo sapiens <400> 15 acucaaaaug ggggcgcuuu cc 22 <210> 16 <211> 23 <212> RNA <213> Homo sapiens <400> 16 gaagugcuuc gauuuugggg ugu 23 <210> 17 <211> 22 <212> RNA <213> Homo sapiens <400> 17 uuauaauaca accugauaag ug 22 <210> 18 <211> 23 <212> RNA <213> Homo sapiens <400> 18 uaagugcuuc cauguuuugg uga 23 <210> 19 <211> 23 <212> RNA <213> Homo sapiens

· ·

<400> 19 cagugcaaua guauugucaa agc

· ·

<210>	20
<211>	20
<211>	
~212>	RNA .
<213>	Homo sapiens
	20
<400>	
agggcco	ccc cucaauccug u
<210>	21
<211>	22
<212>	RNA Homo sapiens
<213>	Homo sapiens
<400>	21
	agua gguuguauag uu
	-8 6888 - -
<210>	22
<211>	
<212>	
<213>	Homo sapiens
<100>	22
<400>	
uageage	cacg uaaauauugg cg
<210>	22
<210>	
<211>	
<212>	
<213>	Homo sapiens
<400>	
caaagug	cuu acagugcagg uagu
<210>	24
<211>	23
<212>	
<213>	Homo sapiens
<400>	24
ugugcaa	aauc caugcaaaac uga
<210>	25
<211>	23
<212>	RNA
<213>	Homo sapiens
<400>	25
	auca gacugauguu gac
3	<u> </u>
<210>	26
<211>	
-11-	

<212> RNA <213> Homo sapiens <400> 26 uucaaguaau ccaggauagg cu 22 <210> 27 <211> 22 <212> RNA <213> Homo sapiens <400> 27 cuagcaccau cugaaaucgg uu 22 <210> 28 <211> 21 <212> RNA <213> Homo sapiens <400> 28 uagcaccauu ugaaaucagu g 21 <210> 29 <211> 21 <212> RNA <213> Homo sapiens <400> 29 uauugcacuu gucccggccu g 21 <210> 30 <211> 22 <212> RNA <213> Homo sapiens <400> 30 agcagcauug uacagggcua ug 22 <210> 31 <211> 22 <212> RNA <213> Homo sapiens <400> 31 uuaaggcacg cggugaaugc ca 22 <210> 32 <211> 22 <212> RNA <213> Homo sapiens . <400> 32 cagugcaaug uuaaaagggc au 22

.

.

.

<210> 33 <211> 22 <212> RNA <213> Homo sapiens <400> 33 ugugacuggu ugaccagagg gg 22 <210> 34 <211> 23 <212> RNA <213> Homo sapiens <400> 34 uauggcuuuu uauuccuaug uga 23 <210> 35 <211> 23 <212> RNA <213> Homo sapiens <400> 35 acuccauuug uuuugaugau gga 23 <210> 36 <211> 24 <212> RNA <213> Homo sapiens <400> 36 24 agcuacaucu ggcuacuggg ucuc <210> 37 <211> 23 <212> DNA <213> Artificial Sequence <220> <223> probe for miR-302b* <400> 37 agaaagcact tccatgttaa agt 23 <210> 38 <211> 23 <212> DNA <213> Artificial Sequence <220> <223> probe for miR-302b <400> 38

•

•

ctactaaaac atggaagcac tta

•

•

.

23

22

23

22

<210> 39 <211> 22 <212> DNA <213> Artificial Sequence <220> <223> probe for miR-302c* <400> 39 cagcaggtac ccccatgtta aa <210> 40 <211> 23 <212> DNA <213> Artificial Sequence <220> <223> probe for miR-302c <400> 40 ccactgaaac atggaagcac tta <210> 41 <211> 22 <212> DNA <213> Artificial Sequence <220> <223> probe for miR-302a* <400> 41 aaagcaagta ctaccacgtt ta <210> 42 <211> 23 <212> DNA <213> Artificial Sequence <220> <223> probe for miR-302a <400> 42 tcaccaaaac atggaagcac tta

<210> 43 <211> 23 <212> DNA <213> Artificial Sequence

<220> <223> probe for miR-302d

<400> 43 acactcaaac atggaagcac tta

. .

23

<210>	44
<211>	22
<212>	DNA
<213>	Artificial Sequence
	-

<220> <223> probe for miR-367

<400> 44 tcaccattgc taaagtgcaa tt

22

<210>	45
<211>	23
<212>	DNA
<213>	Artificial Sequence
<220>	

<223> probe for miR-200c

<400> 45 tccatcatta cccggcagta tta

23

<210>	46
<211>	
<212>	
	Artificial Sequence
-210-	Antinetal Sequence

<220> <223> probe for miR-368

<400> 46 aaacgtggaa tttcctctat gt

22

<210> <211>	••
<212>	
<220> <223>	probe for miR-154*

<400> 47 aataggtcaa ccgtgtatga tt

<210> 48 <211> 21 <212> DNA <213> Artificial Sequence <220> <223> probe for miR-369 <400> 48 aaagatcaac catgtattat t <210> 49 <211> 21 <212> DNA <213> Artificial Sequence <220> <223> probe for miR-370 <400> 49 ccaggttcca ccccagcagg c <210> 50 <211> 23 <212> DNA <213> Artificial Sequence <220> <223> probe for miR-301 <400> 50 gctttgacaa tactattgca ctg <210> 51 <211> 21 <212> DNA <213> Artificial Sequence <220> <223> probe for miR-371 <400> 51 acactcaaaa gatggcggca c 1 <210> 52 <211> 23 <212> DNA <213> Artificial Sequence <220> <223> probe for miR-372

. ·

21

23

21

<400> 52 acgctcaaat gtcgcagcac ttt

• •

•

<210> 53 <211> 23 <212> DNA <213> Artificial Sequence <220>

<223> probe for miR-373

<400> 53 acaccccaaa atcgaagcac ttc

23

23

<210> 54 <211> 22 <212> DNA <213> Artificial Sequence

<220> <223> probe for miR-373*

<400> 54 ggaaagcgcc cccattttga gt

22

<210> 55 <211> 21 <212> DNA <213> Artificial Sequence

<220> <223> probe for miR-296

<400> 55 acaggattga gggggggccc t

21

<210> 56. <211> 22 <212> DNA <213> Artificial Sequence <220> <223> probe for miR-374

<400> 56 cacttatcag gttgtattat aa

<210> 57 <211> 22 <212> DNA

<213> Artificial Sequence <220> <223> probe for let-7a-1 <400> 57 aactatacaa cctactacct ca 22 <210> 58 <211> 22 <212> DNA <213> Artificial Sequence <220> <223> probe for miR-16 <400> 58 cgccaatatt tacgtgctgc ta 22 <210> 59 <211> 24 <212> DNA <213> Artificial Sequence <220> <223> probe for miR-17-5p <400> 59 actacctgca ctgtaagcac tttg 24 <210> 60 <211> 23 <212> DNA <213> Artificial Sequence <220> <223> probe for miR-19b <400> 60 tcagttttgc atggatttgc aca 23 <210> 61 <211> 23 <212> DNA <213> Artificial Sequence <220> <223> probe for miR-21 <400> 61

gtcaacatca gtctgataag cta

•

.

.

11

<210> 62 <211> 22 <212> DNA <213> Artificial Sequence <220> <223> probe for miR-26a <400> 62 agcctatcct ggattacttg aa <210> 63 <211> 22 <212> DNA <213> Artificial Sequence <220> <223> probe for miR-29 <400> 63 aaccgatttc agatggagct ag <210> 64 <211> 21 <212> DNA <213> Artificial Sequence <220> <223> probe for miR-29b-2 <400> 64 cactgatttc aaatggtgct a <210> 65 <211> 21 <212> DNA <213> Artificial Sequence <220> <223> probe for miR-92 <400> 65 caggccggga caagtgcaat a <210> 66 <211> 22 <212> DNA <213> Artificial Sequence <220>

.

•

21

22

22

<223> probe for miR-103

<400> 66 catagccctg tacaatgctg ct

٠

.

22

<210> 67 <211> 22 <212> DNA <213> Artificial Sequence <220>

<223> probe for miR-124a #

<400> 67 tggcattcac cgcgtgcctt aa

22

<210> 68 <211> 22 <212> DNA <213> Artificial Sequence

<220> <223> probe for miR-130a #

<400> 68 atgccctttt aacattgcac tg

22

·,•

<210> 69 <211> 22 <212> DNA <213> Artificial Sequence <220>

<223> probe for miR-134 #

<400> 69 cccctctggt caaccagtca ca

22

<210> 70 <211> 23 <212> DNA <213> Artificial Sequence <220>

<223> probe for miR-135-2 #

<400> 70 tcacatagga ataaaaagcc ata

23

<210> 71

<211> 23 <212> DNA <213> Artificial Sequence . <220> <223> probe for miR-136 # <400> 71 tccatcatca aaacaaatgg agt 23 <210> 72 <211> 24 <212> DNA <213> Artificial Sequence <220> <223> probe for miR-222 <400> 72 gagacccagt agccagatgt agct 24 <210> 73 <211> 23 <212> RNA <213> Homo sapiens <400> 73 uaagugcuuc cauguuunng unn 23 <210> 74 <211> 20 <212> DNA <213> Artificial Sequence <220> <223> forward primer for miR-302b*~302b~302c*~302a~302a~302d~367 cluster <400> 74 gggctccctt caactttaac 20 <210> 75 <211> 30 <212> DNA <213> Artificial Sequence <220> <223> reverse primer for miR-302b*~302b~302c*~302c~302a*~302a~302d~367 cluster <400> 75 attctgtcat tggcttaaca atccatcacc 30

,

.

<210> 76 <211> 20 <212> DNA <213> Artificial Sequence <220> <223> forward primer for miR-371~372~373*~373 cluster <400> 76 cgatcgccgc cttgccgcat 20 <210> 77 <211> 30 <212> DNA <213> Artificial Sequence <220> <223> reverse primer for miR-371~372~373*~373 cluster <400> 77 tggttcgtga tgccctactc aaacagggac 30 <210> 78 <211> 30 <212> DNA <213> Artificial Sequence <220> <223> forward primer for miR-30a~30a* cluster <400> 78 attgctgttt gaatgaggct tcagtacttt 30 <210> 79 <211> 30 <212> DNA <213> Artificial Sequence <220> <223> reverse primer for miR-30a~30a* cluster <400> 79 ttcagctttg taaaaatgta tcaaagagat 30 <210> 80 <211> 30 <212> DNA <213> Artificial Sequence <220>

•

<223> forward primer for let-7a-1

<400> 80 gatteetttt caccatteac cetggatgtt

•

..

30

<210> 81 <211> 30 <212> DNA <213> Artificial Sequence

<220> <223> reverse primer for let-7a-1

<400> 81 tttctatcag accgcctgga tgcagacttt

30

<210> 82 <211> 25 <212> DNA <213> Artificial Sequence

<220> <223> forward primer for GAPDH

<400> 82 tgtcatcaat ggaaatccca tcacc

25

<210> 83 <211> 25 <212> DNA <213> Artificial Sequence

<220>

<223> reverse primer for GADPH

<400> 83 catgagtcct tccacgatac caaag

25

<210> 84 <211> 91 <212> RNA <213> Artificial Sequence

<220>

<223> miRNA precursor for miR-302b* and miR-302b

<400> 84

guuggguggg cucccuucaa cuuuaacaug gaagugcuuu cugugacuuu	aaaaguaagu	60
--	------------	----

gcuuccaugu uuuaguagga gugaauccaa u 91

<210> 85 <211> 81 <212> RNA <213> Artificial Sequence <220>		
<223> miRNA precursor for miR-30	02c* and miR-302c	
<400> 85 gggauccccu uugcuuuaac auggggguac o	cugcugugug aaacaaaagu aagugcuucc	60
auguuucagu ggaggugucu c	81	
<210> 86		
<211> 69 <212> RNA		
<213> Artificial Sequence		
<220>		
<223> miRNA precursor for miR-30)2a* and miR-302a	
<400> 86 ccaccacuua aacguggaug uacuugcuuu g	2222112222 222112221122 11122211211	60
conconcana anogaggang anoungounn g		00
uggugaugg	69	
-210: 07		
<210> 87 <211> 84		
<212> RNA		
<213> Artificial Sequence		
<220>		
<223> miRNA precursor for miR-30	02d	
<400> 87		
aggggccccc ucuacuuuaa cauggaggca c	uugcuguga caugacaaaa auaagugcuu	60
ccauguuuga gugugguggu uccu	84	
<210> 88		
<211> 90		
<212> RNA <213> Artificial Sequence		
<220> <223> miRNA precursor for miR-36	57	
<400> 88		
uggcuacagg ccauuacugu ugcuaauaug c	caacucuguu gaauauaaau uggaauugca	60

. •

<210> 89 <211> 84 <212> RNA <213> Artificial Sequence <220> <223> miRNA precursor for miR-200c <400> 89 ggcgggggcc cucgucuuac ccagcagugu uugggugcgg uugggagucu cuaauacugc 60 cggguaauga uggaggcccc uguc 84 <210> 90 <211> 86 <212> RNA <213> Artificial Sequence <220> <223> miRNA precursor for miR-368 <400> 90 uuugguauuu aaaaggugga uauuccuucu auguuuaugu uauuuauggu uaaacauaga . 60 ggaaauucca cguuuucagu aucaaa 86 <210> 91 <211> 75 <212> RNA <213> Artificial Sequence <220> <223> miRNA precursor for miR-154* <400> 91 uacuugaaga uagguauccg uguugccuuc gcuuuauuug ugacgaauca uacacgguug 60 accuauuuuu cagua 75 <210> 92 <211> 69 <212> RNA <213> Artificial Sequence <220> <223> miRNA precursor for miR-369 <400> 92 uugaagggag augaccgugu uauauucgcu uuauugacuu cgaauaauac augguugauc 60

uuuucucag

<211> 75 <212> RNA ¢ <213> Artificial Sequence <220> <223> miRNA precursor for miR-370 <400> 93 agacagagaa gccaggucac gucucugcag uuacacagcu cacgagugcc ugcuggggug 60 gaaccugguc ugucu 75 <210> 94 <211> 84 <212> RNA <213> Artificial Sequence <220> <223> miRNA precursor for miR-301 <400> 94 cugcuaacga augcucugac uuuauugcac uacuguacuu uacagcuagc agugcaauag 60 84 uauugucaaa gcaucugaaa gcag <210> 95 <211> 76 <212> RNA <213> Artificial Sequence <220> <223> miRNA precursor for miR-371 <400> 95 agccuguggc acucaaacug uggggggcacu uucugcucuc uggugaaagu gccgccaucu 60 uuugaguguu accgcu 76 <210> 96 <211> 80 <212> RNA <213> Artificial Sequence <220> <223> miRNA precursor for miR-372 <400> 96 ucacccugug ggccucaaau guggagcacu auucugaugu ccaaguggaa agugcugcga 60 cauuugagcg ucaccgguga 80

<210>

<210> 97 <211> 75 <212> RNA <213> Artificial Sequence <220> <223> miRNA precursor for miR-373* and miR-373 <400> 97 acugggauac ucaaaauggg ggcgcuuucc uuuuugucug uacugggaag ugcuucgauu 60 uugggguguc ccugu 75 <210> 98 <211> 72 <212> RNA <213> Artificial Sequence <220> <223> miRNA precursor for miR-296 <400> 98 cccuuccaga gggccccccc ucaauccugu ugugccuaau ucagaggguu ggguggaggc 60 72 ucuccugaag gg <210> 99 <211> 72 <212> RNA <213> Artificial Sequence <220> <223> miRNA precursor for miR-374 <400> 99 60

auugucugug ua